REMARKS

In the above referenced office action, Claims 1-21 are pending in the application. Claims 1-4, 11-14 and 21 stand rejected. Claims 5-10 and 15-20 are being objected to but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. No new matter is being added.

Rejections Under 35 USC § 103(a)

With respect to the Applicants obligation under 37 CFR §1.56, Applicants state that the subject matter of Claims 1-21 was commonly owned at the time any inventions covered therein were made.

Claims 1-4, 11-14 and 21 have been rejected under 35 USC § 103(a) as being unpatentable over Zheng (U.S. Patent 6,195,303) (hereinafter "Zheng"). These rejections have been traversed and reconsideration is hereby respectfully requested.

In regards to Claim 1, Claim 1 recites "generating an address for a first one of the N memory blocks as a current

first possible refresh block and *address for a current second one of the N memory blocks* as a current *second* possible refresh block, for refreshing at least a portion of *one* of the possible refresh blocks" (emphasis added). The Office Action acknowledges on page 3 that "Zheng does not clearly disclose the step of generating address for a current second one of the N memory blocks as a current second possible refresh block". The Office Action, however, asserts that "it would have been obvious to ……. recognize the computer system of Zheng is able to generate address for a second one of the N memory blocks as a current second possible refresh block."

Zheng teaches various mechanisms for refreshing a DRAM, all of which are based on generating a single address used for refreshing a corresponding portion of the DRAM. Specifically, description for the Ref_Addr Generator (630 in FIG. 6 and 730 in FIG. 7) discloses the generation of the single address as an output.

In contrast, Claim 1 includes limitations describing the generation of the second address as an improved mechanism for

refreshing the DRAM in case of a contention with the first address. On the contrary, Zheng teaches away from generating two addresses for "refreshing at least a portion of *one* of the possible refresh blocks" (emphasis added) by disclosing a dedicated address generator, e.g., the Ref_Addr, to generate one address for each refresh block. Thus, Zheng does not teach or suggest the generation of two possible selectable addresses for refreshing one of the possible refresh blocks.

Therefore, the Office Action fails to establish a *prima facie* case of obviousness, since the Office Action does not point out where each and every element of the claimed invention, arranged as required by Claim 1, is found in one or more prior art references, either expressly or under the principles of inherency. Hence, Claim 1 is allowable for at least this reason.

In regards to Claim 2, Claim 2 recites "refreshing the at least portion of the current second possible refresh block during the certain interval responsive to the following: i) *the memory block of the externally generated access contending with*

17

the current first possible refresh block and, ii) the current first and second possible refresh blocks being different ones of the N memory blocks." (emphasis added). Referring to Column 7, line 17 through Column 8, line 14, and Column 8, lines 29-39, the Office Action states that Zheng teaches or suggests, either expressly or under the principles of inherency, all of the limitations of Claim 2.

Applicants have reviewed above cited reference and are unable to find the "refreshing" occurring in response to "the memory block of the externally generated access contending with the current first possible refresh block". In addition, Zheng does not teach or suggest comparison of the first and second addresses for checking whether the first and second possible refresh blocks are the same. Hence, Claim 2 is allowable for at least this reason.

In regards to Claims 3 and 4, they directly or indirectly depend from Claim 1. For reasons similar to those stated above in regards to Claim 1, Claims 3 and 4 are allowable for at least this reason.

U.S.S.N. 10/036,838

In regards to Claim 11, Claim 11 recites "a multiplexer for receiving the current first possible refresh block and the current second possible refresh block from the respective address generators". The Office Action states "the limitation of the Claim (11) are rejected as the same reasons set forth in Claim 1."

Zheng does not teach or suggest a multiplexer for receiving inputs from the respective address generators. On the contrary, Zheng discloses a Mux (632 in FIG. 6 and 732 in FIG. 7) to receive only one input from the Ref_Addr Generator (630 in FIG. 6 and 730 in FIG. 7).

Therefore, the Office Action fails to establish a *prima facie* case of obviousness, since the Office Action does not point out where each and every element of the claimed invention, arranged as required by the Claim 11, is found in one or more prior art references, either expressly or under the principles of inherency. Hence, Claim 11 is allowable for at least this reason.

Independent Claim 21 includes limitations similar to those of Claim 11.   Hence, Claim 21 is allowable for reasons similar to those stated above in regards to Claim 11.   Dependent Claims 12, 13 and 14, directly or indirectly depend from Claim 11. Claims 12, 13, and 14 also include additional features not found in the cited reference.   For reasons similar to those stated above in regards to Claim 11, Claims 12, 13 and 14 are allowable for at least this reason.

Allowable Subject Matter

Claims 5-10 and 15-20 are being objected to but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.   The Examiner's conditional allowance of Claims 5-10 and 15-20 is appreciated.

Claims 5-10 indirectly or directly depend from Claim 1. Similarly, Claims 15-20 indirectly or directly depend from Claim 11.   For reasons similar to those stated above in regards to Claims 1 and 11, Claims 5-10 and 15-20 are allowable in their present form for at least this reason.

CONCLUSIONS

For the foregoing reasons, the Applicants respectfully submit that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a Notice of Allowance for all pending claims.

Should the Examiner deem that any further action by the Applicants would be necessary for placing this application in condition for allowance, the Examiner is invited to contact the undersigned agent at the telephone number listed below.

Respectfully submitted,

Tung & Associates

Randy W. Tung
Reg. No. 31,311
Telephone: (248) 540-4040